

is required to discover the misconduct, Lockheed was successful in concealing these improper changes in tolerance from the United States.

157. Another example is Tool No. 5HU01431-102-FTP. On the top half of a TISOC for this tool, Tool Inspector Dennis Puett noted that the tool was out-of-tolerance. Among other problems, there was a double line on the tool with no indication as to which line, if either, was the correct one. Because of these nonconformances, Mr. Puett issued a Tool Hold.

158. In the space on the TISOC for "Proposed Action to Fix Non-Conformities," Lockheed tool engineer Paul Sparlin changed the tolerance requirements on the tool design on or about March 21, 1997. As a result, Lockheed placed a nonconforming tool into production.

159. The tool design for Tool No. 5HU01431-101-FTP, contains a specific instruction to construct the tool at an improper tolerance. The instruction appears as flag note #121, which states to "fabricate and inspect" the "scribe line to a tolerance of +/- .030." Again, .010 is the proper tolerance for scribe lines, as evidenced by the Al Caudell memorandum. The tool at issue relates to the spar leading edge flap, which is a flap on the wing. If it is of the wrong dimension, it will not fit properly with the other parts of the aircraft.

160. Additional examples where Lockheed changed the tool design and/or the tolerance on the tool design so that it matched some or all of the nonconformances noted in the tools are set forth in the following table:

Tool Number	TISOC Number	Related TOS Number(s)
5HU01100-101-FAJ	A12014	
5HU02100-101-FAJ-1	A11386	B09966
5HU02100-101-FAJ-2	A06198	B09983

5HU02100-102-FAJ-2	A06197	B09982
5HU03100-101-FAJ-1	A11387	
5HU03100-101-FAJ-2	A12019	B10043
5HU03100-102-FAJ-2	A12020	B10046
5HW01214-102-CMF		

161. In a 2004 report by the Marietta Project Tooling Team, Lockheed admitted that using only the tool design as the standard for acceptance of tools without reference to industry standards is not appropriate and that the practice "has resulted in inconsistencies and inefficiencies throughout the design, planning, and manufacturing processes of project tools."

162. The Project Tooling Team recommended establishing "a policy that places the industry standard for project tooling as the compliance requirements" and "procedures that will ensure compliance to the industry standard."

163. At the time it changed the tolerance and/or tool design requirements in order to "buyoff" nonconforming tools, Lockheed knew that doing so was against industry standards and would result in "inconsistencies and inefficiencies." Nevertheless, Lockheed engaged in this misconduct in furtherance of a scheme to facilitate the submission of false claims for payment.

c. *Lockheed Discontinued the Vital Tool Try Inspection Process to Expedite Use of Nonconforming Tools*

164. A Tool Try is an inspection procedure in which a newly completed tool actually produces the part, tool, or assembly for which it was designed. When Tool Try was conducted, Tool Inspectors observed the process to ensure that the parts or assemblies produced by the tool conformed to the tool design and that the tool produced sufficient quantities of the part or assembly.

165. To expedite acceptance of nonconforming tools to maintain schedule, Lockheed also eliminated the critical "Tool Try" inspection process. Even before eliminating it, Lockheed did not always follow the process and allowed tools to be used in the production of aircraft even though they did not pass Tool Try.

166. If a tool failed a Tool Try, an inspector placed a Tool Hold on it to prevent it from being released into production until it was reworked, tested again, and approved by an inspector.

167. The 1998 Internal Audit recognized the importance of Tool Try as a way to assess the cause of the numerous nonconforming tools Lockheed had observed in the 1990s.

168. On or about May 28, 1998, E.R. Ouellette, of F-22 Quality Assurance issued an "F-22 Quality Alert" which noted, "There have been tools used in the Assembly area with Tool Try Stickers without notation in the PJS ["Production Job Sheet"] that a Tool Inspector has accomplished the tool try and given the OK to use the tool."

169. Mr. Ouellette further noted that "[a]s a direct result of these actions, tools have not been corrected and are directly responsible for nonconformances that are being noted during the assembly build process."

170. Despite the recognized importance of Tool Try, on or about March 29, 1999, E. Luther Hudson, Lockheed's Division Manager of Tool Inspection, distributed a memorandum discontinuing Tool Trys for all tool codes except numerical control. At the time, Hudson was in charge of all tooling for the Aeronautical Division, which included Lockheed's facilities in Marietta, Georgia; Fort Worth, Texas; and Palmdale, California. The memorandum eliminated Tool Try because, it claimed, the process was "non-value added."

171. Twelve top managers at Lockheed received notice of this dramatic change in policy with instructions to give it their "utmost attention" and "to revise all internal job instructions."

172. Mr. Hudson had a financial incentive to discontinue Tool Try. Mr. Hudson's "Individual Rating Sheet—Participant" for the "1999 Management Incentive Compensation Plan" notes that individual objectives are established at the beginning of each year of the compensation plan. The second objective for Hudson was to "Achieve a 25% reduction in tools waiting tool try." On his rating sheet, Hudson notes that he achieved this goal by discontinuing Tool Try for all "hard tools," resulting in the elimination of 80% of tools awaiting Tool Try.

173. Mr. Hudson's achievement of this objective increased the likelihood that he would receive a monetary reward for job performance. Moreover, department managers such as Hudson receive a percentage of any amount "saved" from the department budget.

174. The statement that Tool Try was "non-value added" is false and material.

175. Upon information and belief, the United States acquiesced in the discontinuation of Tool Try but did so because it relied on the false statement that it was "non-value added."

176. Upon information and belief, Lockheed did not inform the United States that Tool Try was used to ensure that the parts or assemblies produced by the tool conformed to engineering drawings and that the tool produced sufficient quantities of the part or assembly.

177. Upon information and belief, Lockheed did not inform the United States that the 1998 Internal Audit recognized the importance of Tool Try.

178. Upon information and belief, Lockheed did not inform the United States that Mr. Hudson had a financial incentive for discontinuing Tool Try.

179. The following are just a few of the perhaps hundreds or more tools that were awaiting Tool Try at the time that Lockheed improperly discontinued it based on misrepresentations and omissions. Upon information and belief, both the amounts for the nonconforming new tool and the amounts for cost overruns associated with the tool being placed in production were billed by Lockheed to the United States:

5HU05022-101-SF	5HU05022-106-SF
5HU05022-102-SF	5HU05022-107-SF
5HU05022-103-SF	5HU05022-108-SF
5HU05022-104-SF	5HU05022-109-SF
5HU05022-105-SF	5HU05022-110-SF

d. *Lockheed Used Inadequate "Inspections" by LMAMMC Personnel as a Pretext for Accepting Nonconforming Tools.*

180. In lieu of conducting proper inspections of tools produced by outside vendors, Lockheed improperly has relied on the vendors themselves to certify that each tool meets engineering and design specifications. Additionally, Lockheed has representatives from LMAMMC "inspect" the tools at the vendor site before they are shipped to Lockheed's facility in Marietta, Georgia.

181. However, LMAMMC personnel do not receive training as Tool Inspectors, have no experience as Tool Inspectors, and lack the expertise to determine if the tools meet the tool design requirements. Additionally, LMAMMC and most if not all outside vendors lack the equipment to conduct proper inspections.

182. A highly-precise inspection of tool dimensions is required for any tool that has a contour to it, as opposed to being flat. The vast majority of tools used in the production of the C-130 and F-22 require this rigorous inspection. To conduct such an inspection, Tool Inspectors at Lockheed's Marietta facility use a laser tracker to

inspect tool dimensions to ensure that they meet the tool design requirements. The tracker aims a laser at the tool, and the laser beam is reflected back onto the head of the laser tracker in order to measure distances and degrees on the tool. The laser tracker is sufficiently sophisticated to take into account changes in tool dimensions that are caused by temperature and other environmental conditions. Upon information and belief, LMAMMC and the outside vendors did not possess laser trackers and/or did not have personnel qualified to use them.

183. In lieu of a laser tracker, a coordinate measuring machine also may be used to conduct a satisfactory inspection; however, because that machine does not account for environmental conditions, the measurements must be conducted in a room with environmental controls that simulate standard conditions for measuring. Upon information and belief, outside vendors do not have these environmentally controlled rooms.

184. Moreover, all measuring devices must be certified on a continuing basis by specially trained personnel in Lockheed's calibration lab. Calibration is strictly required by the Department of Defense and Lockheed's contract with the United States. Upon information and belief, outside vendors lack the proper facilities to calibrate measuring equipment.

185. In the absence of calibration labs, environmentally controlled rooms, and laser trackers, outside vendors cannot conduct proper inspections of tools before they are approved for shipment.

186. Moreover, LMAMMC representatives frequently fail to conduct an independent, physical Tool Inspection. Instead, they merely make sure that each tool has appropriate paperwork and rely on the vendors' assertions that the tools meet engineering and design standards. Neither LMAMMC's "inspections" nor the vendors' own "inspections" are sufficient for approval and release of a tool under Lockheed's contract with the United States. These facts are corroborated by the high percentage of



tools approved by LMAMMC which subsequently fail Lockheed's proper inspection. Lockheed Tool Inspectors can testify to and substantiate these facts.

187. Nevertheless, Lockheed has accepted and continues to accept and to put into use tools produced by outside vendors without an independent inspection by its own Tool Inspectors.

188. Relators Harrison and Moss previously have identified for the United States approximately 260 pages of "Vendor Tooling Check Lists," which document inadequate, pretextual "inspections" on numerous tools at outside vendor locations.

189. A Vendor Tooling Check List is a form consisting of a single page with eleven enumerated items relating to tool quality. Next to each item are two columns, one labeled "accept" and one labeled "reject." A representative of LMAMMC places a stamp next to each item to indicate that it has been reviewed and to indicate whether the item is acceptable or rejected. There also is a space to document anomalies observed with the tool and a space for the representative to sign his or her name to indicate that the tool is approved to ship to Lockheed.

190. A number of check lists completed at outside vendor locations purport to address two separate and distinct tools (such as the left-hand and right-hand versions of a particular tool) on the same check list; however, these check lists do not include separate entries for evaluating the check list criteria for each tool, and the list of "anomalies/issues" does not distinguish among the tools. While the left-hand and right-hand versions of a tool may be mirror images of each other, one cannot assume that when they are first manufactured they have the same non-conformities. When two tools appear on a single check list in this manner, there is no indication that they were inspected separately by personnel at the outside vendor locations to ensure that they met the applicable tool design and purchase order standards. Nevertheless both tools were approved for shipment to Lockheed.

191. Tools which should have been inspected individually by AMMC but which were treated as a single tool on the Vendor Tooling Check List include the following:

Tool Numbers	Outside Vendor	Date of "Inspection"
5HF11433-109/111-CMF	Aircraft Engineering Corp.	June 6, 1997
5HF11519-101/102-LF	Votaw	July 29, 1997
5HF12768-901/902-FAJ	Aircraft Engineering Corp.	June 6, 1997
5HF13820-901/901-FTP-2	Tucker Technology	June 1, 1998
5HU01510-101/102-DTL-2	Aerobotics	Sept. 22, 1997
5HU01520-101/102-MBF-1	Aerobotics	July 24, 1997
5HU01520-101/102-MF-2	Aerobotics	Aug. 15, 1997
5HU01520-129/131/133-DLT	Aerobotics	Aug. 15, 1997
5HU01540-101/102-ATT	Aerobotics	July 30, 1997
5HU01540-101/102-FTP	Aerobotics	July 30, 1997
5HU01550-101/102-ATT	Aerobotics	Aug. 4, 1997
5HU01550-101/102-FTP	Aerobotics	Aug. 21, 1997
5HU02070-101/102-FTP	Aerobotics	Aug. 21, 1997
5HU02070-101/102-ATT	Aerobotics	Aug. 26, 1997
5HU02071-101/102-ATT	Aerobotics	Aug. 26, 1997
5HU02071-101/102-FTP	Aerobotics	Aug. 26, 1997
5HU03070-101/102-ATT	Aircraft Engineering Corp.	Oct. 28, 1997
5HU03070-101/102-CMF	Aircraft Engineering Corp.	Oct. 28, 1997
5HU03071-101/102-ATT	Aircraft Engineering Corp.	Oct. 28, 1997
5HU03071-101/102-CMF	Aircraft Engineering Corp.	Oct. 28, 1997
5HU04511-101/102-DLT	Aircraft Engineering Corp.	Oct. 6, 1997



5HU04531-101/102-DLT	Aircraft Engineering Corp.	Aug. 12, 1997
5HU04551-101/102-ATT	Aerobotics	Aug. 21, 1997
5HU04551-101/102-CMF	Aerobotics	Aug. 21, 1997
5HU04551-101/102-DLT	Aerobotics	Aug. 21, 1997*
5HU08124-101/102-MBF	Votaw	July 31, 1997
5HU09125-105/106-MBF-2	Aircraft Engineering Corp.	June 24, 1997
5HU09125-105/106-MF-1	Aircraft Engineering Corp.	July 16, 1997
5HU09125-105/106-MF-2	Aircraft Engineering Corp.	July 1, 1997
5HU09125-113/114-DLT	Aircraft Engineering Corp.	July 1, 1997
5HU09125-123/124-DLT	Aircraft Engineering Corp.	July 1, 1997
5HU09125-125/126-DLT	Aircraft Engineering Corp.	July 2, 1997
5HW02107-901/902-FAJ	Tucker Technology	June 11, 1998

\*This Check List contains a notation that says, "1 tool only," which is facially inconsistent with the listing of -101 and -102, which are two separate tools.

192. Another Check List demonstrating improper inspection is from defendant Aerobotics dated August 25, 1997, for Tool No. 5HU04521-101-MF-2. In the "Anomalies/Issues" section, an AMMC representative has written, "CMM or laser not available." Instead, the AMMC "inspector" indicates that a "probe" was "witnessed by Al Caudell LMASC." A tool or part is "probed" when it is checked against the machine that built it, but probing is not a proper inspection procedure because of possible errors in the machine that built the tool. Nevertheless, this tool was approved for shipment.

193. A number of the Check Lists show approval to ship to Lockheed even though the check list itself demonstrates that not all of the enumerated inspections were completed. For example, the Check List from Aerobotics dated July 30, 1997, for Tool Nos. 5HU01540-101/102-ATT, shows that items 2, 4-8, and 10 were not examined. Nevertheless, this tool was approved for shipment to Lockheed.

194. Similarly, the Check List for Aerobotics Tool Nos. 5HU01510-101/102-DLT-2 indicates that no one even checked the tool to make sure it had the proper identification. Nevertheless, the tool was approved to ship on or about September 22, 1997.

195. None of the 11 items for tool conformance was completed on the Check List for Tool No. 5HF13190-901-JDP-5, which was manufactured by Tucker Technology; yet it was approved for shipment to Lockheed on or about June 17, 2006.

196. In addition, the Check List for Tool No. 5HU04551-101/102-ATT, produced by Aerobotics, shows that AMMC verified an end-of-part line to an old FTP "due to schedule constraints." Items 4 through 10 of the Check List were not even inspected.

197. Even when a problem was so clear that the AMMC representatives caught it, the affected tool still was "approved to ship." An example is a Check List from Aircraft Engineering Corporation dated June 6, 1997, for Tool Nos. 5HF12768-901/902-FAJ. On this Check List, the AMMC representative, Danny Flores, noted some nonconformances in the tool and stated, "AMMC PQAR accepts no responsibility for the functionality of this tool." Nevertheless, rather than requiring the vendor to rework the tool, Flores signed the form indicating approval to ship to Lockheed. In so doing, Flores literally "rubber stamped" the tools so that they could be shipped to Lockheed.

198. Similarly, the Check List for Tool No. 5HU01550-101/102-ATT from Aerobotics notes that the FTP excess line is "discrepant & will be reworked at a later date." Nevertheless, the AMMC inspector states that a Tool Hold will be removed, and the tool will be shipped to Lockheed.

199. A similar example is the Check List for Tool No. 5HU09121-101-CMF, which was supplied by Tucker. The Check List references a TISOC, A03954, relating to this tool. On this Check List, the AMMC representative has initialed item six, indicating that he reviewed CMM data, yet the representative notes that the CMM data

shows an out of tolerance condition. Nevertheless, he approved the tool to be shipped to Lockheed.

200. In addition, the Check List for Tool No. 5HF12842-101-JDP (TOS No. B27761), manufactured by vendor Global Tooling Systems, indicates that particular aspects of the tool do not meet the standards of the Manufacturing Standards Manual (the "MSM"). Nevertheless, J. Edwards approved the tools for shipment to Lockheed on or about January 27, 1998.

201. Similarly, on the Check List for Tool No. 5HU09121-102-CMF, the AMMC representative has initialed item six, indicating that he has reviewed CMM data, yet he notes that the CMM data shows an out of tolerance condition. Nevertheless, he approved the tool to be shipped to Lockheed. The Check List also references TISOC No. A03965 for this tool.

202. As further evidence of the cavalier attitude AMMC had regarding inspections, a single "inspector," Keith A. Mize, of Summit, another outside vendor, "inspected" at least twelve different tools on the same day, March 12, 1999. One person could not properly inspect so many tools in a single day.

203. Similarly, Tucker Technology purports to have inspected and approved for shipment six tools (two FTPs, two ATJs, and two CMFs) all on the same day, July 27, 1998. It is not possible to inspect all of those tools properly in a single day. In addition, Tucker purports to have inspected and approved for shipment seven tools relating to base part number 5HU03160 on or about November 12, 1997.

204. Similarly, as illustrated in the chart in Paragraph 191, *supra*, Aerobotics purports to have inspected and approved for shipment at least ten tools on August 21, 1997, and at least six tools on August 26, 1997. Aircraft Engineering Corporation purports to have inspected and approved for shipment at least eight tools on October 28, 1997, and at least six tools on July 1, 1997.

205. Furthermore, Aerobotics purports to have inspected and approved for shipment six tools (two FTPs, two ATJs, and two CMFs for base part 5HU02081) on the same day, October 7, 1997.

206. Despite the cursory and pretextual nature of the LMAMMC inspections, Tool Inspectors' superiors specifically authorized acceptance and release of particular tools based on these substandard inspections. By way of example, on or about September 16, 1996, Lockheed tool engineers Paul Sparlin and Vern Chapman executed two written orders to Tool Inspection on ANVO sheets requiring release of Tool No. 5HU07160-103-ATJ and Tool No. 5HU07145-104-ATJ.

207. Both of the written orders were signed by Senior Operations Engineer Vern Chapman, Empennage IPT Lead Mike Fortson, Structures Deputy David Neal, and Keith Best. Both orders claim that "THE TOOL WAS SUCCESSFULLY INSPECTED AT VOTAW" prior to its shipment to Lockheed. Votaw is one of the subcontractor defendants. Upon information and belief, Lockheed employee Mike Mason, who was a source inspector at the time, visited Votaw during tool development. However, Mason had no experience as a Tool Inspector and also lacked a properly calibrated laser tracker with which to inspect the tool.

208. Both orders indicate that Lockheed demanded the release of these tools "IN ORDER TO MAINTAIN SCHEDULE." As Lockheed management knows from years of experience, the tools that are approved at the outside vendor without a proper inspection often have nonconformances that are discovered when the tools arrive at Lockheed's facilities.

209. For example, Tool Nos. 5HU09125-113 / 114-DLT, which were produced by outside vendor defendant Aircraft Engineering Corporation, were inspected by LMAMMC personnel on July 1, 1997, and approved for shipment to Lockheed the same day.

210. After it arrived at Lockheed, Tool Inspection examined the tool and discovered that it was defective. As a result, Tool Inspection issued Tool Hold No. 93330 on July 20, 1997.

e. *Lockheed Accepted Nonconforming Tools by Closing Them Out "For Accountability Only."*

211. Lockheed also accepted nonconforming tools by closing out tool orders "for accountability only" instead of waiting for Tool Inspection approval. When a tool order is approved "for accountability only," a stamp appears on the tool order corresponding to that tool. The stamp reads, "TOOL ORDER CLOSED FOR ACCOUNTIBILITY [sic] ONLY." Of import, the tool has not been approved following a proper inspection at Lockheed. Instead, the tool has been checked merely to ensure that it has the proper identification numbers.

212. More often than not, salaried Lockheed employees, and not authorized Tool Inspectors, stamped such tool orders closed for accountability only. On occasion, Lockheed management has required Tool Inspectors to close tool orders for accountability only using the Tool Inspectors' own stamps.

213. Lockheed closed out numerous tool orders for accountability only. The following is a list of some tool orders closed for accountability only:

A93811, A93822, A94662, A97705, A97712, B01616, B01714, B02115, B06502  
B06512, B09966, B09981, B09982, B09983, B10034, B10042, B10043, B10045,  
B10046, B10247, B10248, B10368, B10369, B10371, B10373, B11725, B11773,  
B14884, B14885, B14886, B16669, B26558, B29373, B29702, B29717.

f. *Hundreds of Tools Which Were Not Reworked Prior to Being Placed into Production.*

214. Relators Harrison and Moss have provided to the United States approximately 280 Tool Holds representing 280 tools which were nonconforming but not

reworked before being used in the production of the aircraft. A list of these tools and, where available, their corresponding TOS and TISOC numbers, is attached hereto as Exhibit "B."

215. Recall that Tool Holds issue when there are nonconformances to open tool orders relating to a tool. Therefore, each Tool Hold represents a nonconforming tool that had an open tool order at the time Tool Inspectors noted the nonconformances. The specific nonconformances are set forth on the Tool Hold itself or in the referenced TISOC. All of these Tool Holds were issued from 1996 to 1999.

216. When an inspector issues a Tool Hold at Lockheed, it is standard procedure for the pink copy of the Tool Hold to be placed with inspection records while the thicker "buff" copy remains with the tool until it is reworked and an inspector lifts the Tool Hold. Once the tool has been reworked, the pink copy is destroyed.

217. Because these 280 Tool Holds exist at Lockheed as pink copies, it is clear that none of these tools has been reworked. However, because these Tool Holds were issued at the latest in 1999, if the rework were going to be completed, it would have occurred already. Many of these tools are being used to produce aircraft parts, which will in turn prove to be defective.

g. *Lockheed's Own Investigation Confirms Tooling Problems  
Long After the Issuance of the Internal Audit*

218. Despite Lockheed's acknowledgement of improper behavior with respect to tooling in the Internal Audit in 1998 and despite being informed by Tool Inspectors of various problems in or about 1999 (as set forth in Section V(M) below), Lockheed's improper behavior has continued.

219. As recently as the Fall of 2004, Lockheed's own Project Tooling Team in Marietta assessed 928 tools in the assembly and flight line areas. Tools in those areas are being used in the production of the aircraft and are not being held due



to tool nonconformances. Still, the Project Tooling Team found that less than half of the tools surveyed were satisfactory. Approximately 83 of the tools had undergone unauthorized rework, and 274 tools had improper identification and configuration.

220. The Project Tooling Team further concluded, "Project tools and details are not consistently identified in accordance with the MSM Division II and PM-4053 nor are there adequate inspection requirements to assure that we have received them per specifications."

221. Lockheed thus has admitted the above allegations that adequate inspections are not taking place to ensure that tools produced by outside vendors meet specifications.

222. Lockheed further admitted that "[c]ontrols are not adequate to ensure that tools are ready for use[.]" "that tools were not configured properly[.]" and that procedures need to be implemented "to prevent tools from being used that have not been properly inspected . . ."

223. Lockheed's observations notwithstanding, such procedures were in place, and Lockheed properly followed them, until the 1990s when it began engaging in the schemes described herein.

224. The ramifications of using nonconforming tools to construct the F-22 continue to be experienced as of the filing of this Second Amended Complaint. Lockheed continues to have problems with the canopy, inlets, and other parts of the F-22 due to nonconforming tooling. For example, due to nonconforming tooling, the canopies are not sealing properly, and water leaks into the aircraft if it is flown while it is raining. The canopies also are not interchangeable.

**F. Lockheed Improperly Destroyed TISOCs Evidencing Nonconforming Tooling.**

225. In the mid-1990s, Lockheed management instructed Tool Inspection not to inspect tools arriving from outside vendors but rather to accept the "inspection" performed at the outside vendor location and to "buy off" the tool without a proper inspection at Lockheed so that the tools could be used to produce three prototype aircraft that were facing scheduling problems. Then acting Tool Inspection Department Manager, Ed Venable, disagreed with the decision not to inspect any of the vendor produced tools and convinced Lockheed management to allow him to inspect a sampling of tools to ensure that conforming tools had been produced and to determine which vendors were most reliable.

226. Mr. Venable then initiated a procedure whereby a sampling of vendor-produced tools was inspected by tool inspection. Tool inspectors inspected approximately 25 tools and found that every single one of the tools sampled was defective. Tool Inspectors generated a TISOC setting forth the nonconformances observed on each tool.

227. Despite the noted nonconformances, Lockheed insisted that all of the nonconforming tools be released in order to produce the three prototype aircraft that already were behind schedule. Tool inspection understood that once the tools had been used for production of those aircraft, they would be reworked so that their subsequent use no longer would produce nonconforming parts (or tools).

228. Tool Inspection completed TISOCs on other tools that arrived from outside vendors with defects. Each such TISOC that was generated was placed in a manila folder with a green highlight at the top ("green top folder"). The green highlight identified a tool that failed inspection, that was nevertheless used for production of the three prototype planes, and that was to be repaired once the prototypes were completed. The green top folders were placed in Tool Inspection filing cabinets with the

understanding that the tools would be repaired pursuant to the TISOCs contained in the folders. The white and yellow copies of each TISOC were stored together in the green top folders<sup>1</sup>.

229. On a Saturday in or around 1997, Lockheed Tool Inspection supervisor Mel Trott instructed Felecia Link, the sole employee in the Tool Inspection Records Room, to destroy TISOCs reflecting nonconforming tools produced by outside vendors. Trott's request to destroy all of the TISOCs was so unusual that Link asked Trott to repeat it, which he did. Because Mel Trott was her supervisor, Ms. Link did not question the order after he repeated it to her.

230. While Ms. Link was carrying out Trott's order, she was interrupted by Mr. Coy H. Cash, who was serving in a supervisory capacity in Tool Inspection at the time. Mr. Cash recognized the importance of these documents and told Ms. Link to stop.

231. Mr. Cash immediately spoke to Eric Sawyer, who was the Manufacturing and Planning Manager and had supervisory authority over Tool Inspection. Mr. Sawyer agreed to have Ms. Link stop throwing away the documents.

232. Shortly thereafter, however, Mr. Sawyer returned after speaking via telephone to top Lockheed management and reluctantly told Cash to throw away the documents. Based on this directive from his superior, Mr. Cash then instructed Ms. Link to continue destroying the documents.

233. Ms. Link then threw out the contents of at least one and possibly two five-drawer file cabinets filled with TISOCs by placing the documents in her trash

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<sup>1</sup> Each TISOC has a white and yellow copy. Generally speaking, when someone requests that a TISOC be generated to record non-conformities on a specific tool, the person requesting the inspection receives the white copy, and the yellow copy goes to tool inspection records. However, no particular person requested that the tools coming in from outside vendors be inspected, so both copies of the TISOCs pertaining to those tools remained together.

can and then dragging the trash can to a large dumpster, into which she discarded the TISOCs.

234. These vital and irreplaceable tool inspection records were not destroyed in the ordinary course of business because those TISOCs constantly were referred to in order to identify defects in tools so that they could be reworked or to find missing tool parts. The information contained in the TISOCs is not available electronically or through any other source.

235. TISOCs are completed only if a tool is defective. All of the destroyed TISOCs included Tool Inspectors' descriptions of tool defects. The destroyed TISOCs included those in the green top folders discussed above.

236. Had any of the tools to which these TISOCs referred been reworked, those TISOCs would have been removed from the file cabinets and placed elsewhere. Therefore, the Relators are confident that the hundreds or thousands of TISOCs which Mel Trott had destroyed all involved tools that had not been repaired at the time of destruction.

237. This destruction of documents was intended to and did conceal defects in tools that had been approved without proper inspection and to prevent discovery by the United States of Lockheed's false claims stemming from tools approved without proper inspection. Indeed, Lockheed's own Tool Inspectors cannot identify defects in the tools without conducting another complete inspection using their sensitive laser trackers and other equipment.

238. After the destruction of the inspection records, Lockheed reneged on its earlier promise and decided to use the uncorrected tools for production of more than just the three prototype aircraft.

239. The destruction of the TISOCs has rendered rework of the nonconforming tools impossible because there is no way to identify which tools are nonconforming or what corrective action is needed without re-inspecting every tool in

use at Lockheed. Re-inspection is virtually impossible because Tool Inspectors require approximately one to two full days, or more, to conduct a proper inspection of a single tool. As a result of this markedly-improper destruction of documents, defects are not discovered until the tools are used in production and production teams report problems in assembling the aircraft.

240. By the time the defects are discovered, the consequential costs associated with each nonconforming tool have risen exponentially. Not only is the tool itself defective, but so are the parts it created and the portions of the aircraft constructed from those parts. If the tool is a tooling tool (a tool that makes other tools), then all of the tools created by that nonconforming tool will be defective, as well as all of the parts created by those tools. Those additional costs would have been avoided if the original nonconforming tool had been repaired prior to its placement in production.

241. The nonconforming tools will continue to produce nonconforming parts and to assemble the parts improperly, and the safety of aircraft will be placed in greater jeopardy while the costs of producing the aircraft will rise significantly.

242. Lockheed submitted false claims to the United States for the initial production of these tools and for the cost overruns created when these tools were used in the production of aircraft.

**G. Lack of Required Interchangeability of Spare Parts**

243. An important attribute of what the United States purchased from Lockheed was interchangeability of parts on the F-22, so that the aircraft readily could be repaired in the field.

244. As set forth above, construction of F-22s from nonconforming tools, parts, and assemblies has required considerable rework of individual parts of the aircraft in order for the parts to fit together.

245. Often, Lockheed must "shim" and "trim" individual parts in order to make them fit the particular aircraft that is being assembled.

246. As a result, each aircraft essentially is a custom built machine.

247. The rework and "shimming" and "trimming" has not been performed on spare parts.

248. Spare parts for any individual aircraft therefore will not fit properly in the absence of rework and will need to be modified before use, leading to significant delays. This rework will not be possible during military activities in which time is of the essence and Lockheed personnel are not available to rework the spare parts.

249. The non-interchangeability of spare parts violates Department of Defense requirements, which mandate that spare parts fit perfectly and impose fines for non-interchangeability.

250. Lockheed has submitted false claims to the United States for payment of spare parts which are not interchangeable.

**H. Lockheed Attempts to Hide Rework Performed to Nonconforming Tools and Other Overcharges.**

251. When Lockheed decided to rework a nonconforming new tool, rather than simply remake it, Lockheed tried to hide the extensive rework through the various schemes discussed below.

252. Lockheed accomplished this deception under the guise of acceptable tooling activities. By doing so, Lockheed intended to make its improper rework activities more difficult to discover. In addition, Lockheed intended that its schemes would not be apparent on the face of any one particular type of document.

253. Uncovering Lockheed's overcharging thus requires examination of many different types of documents regarding the making and inspection of tools used on both the F-22 and C-130J programs. Lockheed has possession of these documents.

254. Because Lockheed's schemes for hiding tool rework and repair involve manipulation of Lockheed's own procedures and tooling paperwork, the tooling



paperwork itself generally cannot be trusted to accurately reflect work actually performed by Lockheed and its tooling vendors.

255. These paperwork inaccuracies will be shown by gathering all F-22 and C-130J tooling paperwork and organizing that paperwork by tool number or TOS number so that the actual tooling work performed, and payment made therefore, can begin to be ascertained.

256. The various schemes used by Lockheed to hide the fact of rework of nonconforming tools procured from its tooling subcontractors are described below, along with a description of the documents needed to uncover the duplicative charges. Relators have attempted, where possible, to provide examples of tools that were subject to a particular scheme used by Lockheed to overcharge the Government and any documents available to them relating to the schemes.

257. The precise overcharging scheme used by Lockheed cannot always be identified, primarily due to Lockheed's increasing restriction on access to tooling documentation. For example, the following tools, upon information and belief, were subject to at least one of the overcharging schemes alleged below, and regarding which Lockheed has exclusive possession of the documentation needed to identify the precise scheme used:

TOOL #	RELATED TOS #
5HF13020-901-FAJ-2	B28673
5HF13020-902-FAJ-2	B28674
5HF12601-901-FAJ	B23036
5HF11055-901-MEC	B35183
5HF11050-903-FAJ-1	B01393
5HU04005-102-FAJ-2	B28071

5HU02005-101-FAJ-1	B27747
5HF12768-901-FAJ	B22847
5HF12768-902-FAJ	B22848
5HC12011-905-FAJ	B16531
5HC12019-901-FAJ	B36309
5HC12010-902-MEC	
5HC12010-901-MEC	B00705
5HW01291-101-MEA-2	
5HU04005-101-FAJ-1	B28069
5HU02005-102-FAJ-1	B27748
5HF12168-101-MEC	B21172
5HW01291-101-MEC	B10735
5HW01291-102-MEC	B10735
5HW02108-901-FAJ	B28680
5HW02107-901-FAJ	B29373
5HW02107-901-FAJ-2	B29311
5HW02107-902-FAJ	B29373
5HW02107-902-FAJ-2	B29311
5HW02106-901-FAJ	B29142
5HU03005-102-FAJ-1	
5HU01100-101-MEC-1	B10293
5HF12769-903-AJ	
5HF12769-904-AJ	
5HW02106-902-FAJ	B29143
5HF70000-101-MEC	
5HF10000-903-FAJ	B35767

5HF41000-101-MEC	B35076
5HW82303-851-MEA-1	B17331
5HF01000-907-MEA-3	B23080
5HU3005-101-FAJ-2	
5HU01200-101-FAJ	B28134
5HF12169-901-MEC	B21174
5HF12169-902-MEC	B27108

258. Upon information and belief, Lockheed employed other schemes that are not specifically alleged in this Second Amended Complaint because Lockheed has exclusive possession of the documentation of these schemes but that will be discovered as investigation into the allegations contained herein proceeds.

**1. Altering and Re-Identifying Tool Numbers to Disguise Improper Rework and Other Misconduct.**

259. Lockheed has intentionally engaged in a continuous and systematic practice of altering and re-identifying numbers assigned to specific tools. This practice allows Lockheed falsely to bill the United States multiple times for a single tool and hide the amount of rework performed on an individual tool.

260. While there may have been appropriate instances in which Lockheed could use the Alter and Re-identify process, on many occasions when Lockheed initiated an Alter and Re-identify TOS, Lockheed actually was reworking a nonconforming new tool, disguising it as "alteration," and re-identifying the tool number to hide that it was performing rework to a previously approved new tool. In these instances, the "alteration" identified on the Alter and Re-identify TOS or any corresponding alter TOSs will not evidence any significant change to the configuration

of the tool. Likewise, the tool design for the tool will not evidence any significant change to the configuration of the tool.

261. When Lockheed misused the Alter and Re-identify process to disguise extensive rework and repair of a nonconforming new tool, the change to the tool number was not accompanied by a change in how the tool actually was used. For example, despite a different tool number, the tool was not actually used on a different part.

262. This abuse of the Alter and Re-identify process is facilitated by the fact that certain individual aircraft tools can be used to make different parts of an aircraft, and thus could be identified by more than one tool number. In such instances, there is no functional need for Lockheed to acquire two versions of a tool simply because it is used on two different parts of the aircraft.

263. In general terms, when Lockheed is undertaking the alter and re-identify process for the purpose of submitting a false claim to the United States, Lockheed first bills the United States for the cost of making a particular tool with a unique tool number and "make new" TOS. Then, it changes the tool number and continues billing the United States while concealing that the subsequent billing is for work on a tool for which the United States previously paid.

264. The re-identification process takes place when Lockheed generates an "alter and re-identify" order under another TOS to re-identify the tool number with a completely new number.

265. Because neither the original TOS(s) for the tool nor the original tool number is referenced in the claims submission process, the United States is not able to discern the changes.

266. Each tool at Lockheed has an aluminum tag attached to it or a physical stamp on its surface on which the part number and the TOS numbers pertaining to that tool are printed. The part number appears at the top left, and the tool

code is immediately below. At the bottom is a space labeled "T.O.S." The first TOS listed is for the make new order. Then, any additional TOSs applying to that tool are listed. Often, a tool will have multiple tags to accommodate all of the tool order serial numbers.

267. When a tool is altered and re-identified, Lockheed either grinds off the old tool order serial numbers and the original part number, stamps over the old numbers, or replaces the plate entirely.

268. These practices conceal Lockheed's altering and re-identifying of part numbers by preventing the United States from tracing the process back to the original part number, thereby furthering and facilitating the submission of false claims. Even if the United States physically examined the tool for the part number or tool order serial numbers, it would be unable to determine it was the same tool identified by the earlier part number.

269. This concealment demonstrates that Lockheed does not have a legitimate purpose for altering and re-identifying the part numbers for the tools and is engaging in it solely for the purpose of submitting false claims to the United States.

270. Tool orders for Tool No. 5HF12166-102-CMF (a Composite Mold Fixture) illustrate the alter and re-identify process. The "make new" tool order for this tool has TOS #A93822. A tool inspector's stamp appears in the "buyoff box" to indicate that the tool was approved on June 12, 1997. Upon information and belief, the costs billed to this make new TOS totaled at least \$85,534.00, and the United States paid Lockheed this sum of money.

271. An "alter" order also exists for this tool. The TOS for this tool order is A97712, and the Tool No. 5HF12166-102-CMF appears at the top of the tool order. A stamp of approval and the date, June 12, 1997, appear in the "buyoff" box for this tool.

272. There is a third tool order for this tool, TOS #B19020. The part number listed on this tool order has been changed to 5HF12766-102. In other words,

two tool numbers refer to the same tool. That the part numbers refer to the same tool is evidenced by text instructions two-thirds of the way down the page which refer to the alter order of 5HF12166-102 and the TOS of that order, #A97712, which was for part number 5HF12166-102.

273. There is a separate stamp for approval on this alter and re-identify order, dated May 26, 1998, which is nearly a year after the original make new order was approved. During that period of time, Lockheed continued to accrue charges on this tool. Lockheed subsequently billed the United States for those charges. Because of the different tool number, the United States was unaware that it was billed for additional work to a tool for which it had already paid.

274. Another example of an altered and re-identified tool is Tool No. 5HF11100-901-FAJ. The make new TOS number for that tool number is B01515. This make new order was bought off on or about May 28, 1996.

275. The alter and re-identify order for this important and expensive tool is TOS #B24799. The tool number set forth on this tool order is 5HF11099-901-FAJ. This tool order refers to the same tool that was "bought off" under TOS #B01515 above because the instructions section two-thirds of the way down the page references the original part number, "5HF11100-901 FAJ ordered on B01515."

276. The alter and re-identify tool order also has an inspection stamp for approval, dated June 3, 1999. The tool has been approved twice under two different part numbers. However, because Lockheed does not include these tool order documents when submitting its false claims to the United States, the change in part number prevents the United States from detecting the scheme.

277. A document containing "vendor tool cost," indicates that the original tool order (the "make new" order) for this tool was worth \$316,145.20. However, \$368,770.66 is set forth as the total value of the tool which was charged under the re-identified TOS.



278. The difference in the two values shows that the scheme damaged the United States at least in the amount of \$52,625.46. The original \$316,145.20 may also be a false claim, if the tool was approved without a proper Lockheed inspection, as described above. In addition, if the full \$368,770.66 was charged to the United States in addition to the original \$316,145.20, then that amount also is a false claim.

279. Another alter and re-identify example is Tool No. 5HC12010-901-FAJ. The make new tool order was bought off on or about October 8, 1999. The alter and re-identify tool order, TOS # B36637, shows that Lockheed changed the part number from 5HC12010-901 to 5HC12012-901.

280. Cost data pertaining to this tool shows that its value at the time of the print-out was \$198,360.30, which is \$11,215.80 above and beyond the original cost, which is listed as \$187,144.50.

281. The next alter and re-identify example is for Tool No. 5HF12001-101-FAJ, which appears on the "make new" order. This tool is one of the highly important FAJs, and the TOS for the "make new" order is A94662. The tool order was bought off on or about June 7, 1997. The original cost of the tool was at least \$265,630.00, the amount which is written below the buyoff box. Lockheed submitted a claim to the United States for payment of this tool totaling at least that amount.

282. The alter and re-identify order for this tool is B23036. Text instructions on that order indicate that the part number being re-identified is "FAJ 5HF12001-101," which is the part number that appears on the above make new order. On the alter and re-identify order, the part number reads 5HF12601-901.

283. The alter and re-identify order was closed for accountability in 1998. A tool cost printout for the altered tool number, 5HF12601-901-FAJ sets forth the tool value as \$270,412.50. Upon information and belief, Lockheed submitted false claims for payment of work related to the altered and re-identified tool number, in addition to claims under the original tool number.

284. Another example originally had Tool No. 5HF12168-101-FAJ. This tool is another one of the vital FAJs. Although no inspection stamp appears, this order was closed for accountability. The total amount of \$143,375.00 appears to the right of the stamp closing the tool order for accountability, indicating that a claim was submitted to the Government for payment of this tool in that amount. The words "to T.O.S. #B22847" appear on the stamp closing out the tool order because the tool order with TOS #B22847 is for the same tool and remains open so that additional charges can accrue to it.

285. The alter and re-identify order has TOS B22839. The tool number was changed to 5HF12768-901-FAJ. It refers to the tool for which a \$143,375.00 claim was already submitted to the United States, as demonstrated by the instructions section two-thirds of the way down the page, which references the original part number, 5HF12168-101. There is no stamp in the buyoff box on the right hand side of the page, so Lockheed continued to accrue costs for this re-identified tool.

286. Cost data reveals that additional charges accrued to the re-identified tool number. The cost data is for the new tool number, 5HF12768-901-FAJ. The total tool value listed is \$158,959.73, which is \$15,584.73 more than the original cost. Upon information and belief, Lockheed submitted claims for payment of the additional cost of the tool charged to the new tool number.

287. Other altered and re-identified tools include: Tool No. 5HC12011-905-FAJ, which was re-identified to 5HC12013-905-FAJ; Tool No. 5HC12011-901-FAJ, which Lockheed re-identified to 5HC12013-901-FAJ; and Tool No. 5HF12166-101-CMF, which was re-identified to 5HF12766-101-CMF.

288. This practice of altering and re-identifying part numbers to individual tools has occurred hundreds of times since the mid-1990s and has allowed Lockheed to submit multiple claims to the United States for a single tool with different

part numbers. Additional tools which were subject to the alter and re-identify scheme are set forth below:

TOOL #	ALTER & RE-IDENTIFY TOS #	DATE	RELATED TOS #
5HF11830-113-AJ	B55287	06/24/02	B55286
5HF11830-114-AJ	B55288	06/24/02	B55286
5HF11735-105-TD-LF	B46084	12/09/99	B36765
5HF11735-106-TD-LF	B46084	12/09/99	B36765
5HF11735-105-LF	B46085	12/09/99	B46084;
5HF11735-106-LF	B46086	12/09/99	B46884; B36767
5HF13010-901-JDP-8	B31457	12/18/97	B31184
5HF13010-902-JDP-8	B31459	12/18/97	B31184

289. As further evidence that alter and re-identify does not have a legitimate purpose, the Relators have observed that most, if not all, FAJ tools have been altered and re-identified, *except* for the single FAJ (part number 5HF10000) that assembled three major assemblies of the aircraft, each of which was produced by a different company. The three assemblies were manufactured by Lockheed (forward section), Boeing (aft section), and General Dynamics (mid section). Re-identifying the part numbers for tools built jointly would have created confusion among the other contractors and would have risked discovery of Lockheed's false claims.

## **2. Rework disguised as a Tool Alter.**

290. Lockheed often disguised its extensive rework of nonconforming new tools by incorrectly labeling such work as "alteration" to a properly-made tool. Alterations to an aircraft tool are proper, for example, when a change needs to be made to a tool to keep pace with a design change to the plane itself.

291. When appropriate alteration is needed for a tool, Lockheed initiates a TOS form that describes the type of alterations to be performed on a tool. This "Alter TOS" references the tool design for the tool, and that tool design describes in detail how the altered tool will differ from the tool as originally made.

292. Reworking a nonconforming new tool so that it finally conforms to tool design requirements is by definition not a type of tool "alteration." Despite this fact, Lockheed and its outside vendors regularly performed extensive rework to a nonconforming new tool pursuant to an Alter TOS.

293. When Lockheed used an Alter TOS to disguise extensive rework, the identified "alteration" of the tool usually was not necessary for the tool to continue performing its function. This fact can be substantiated by examining the ordered alteration and comparing it to the previous function of the tool.

294. Lockheed's use of an Alter TOS to order extensive rework to a nonconforming tool will be apparent on the tool drawing itself. The tool design for the tools will not evidence any real change to the configuration of the tool. Likewise, the "alteration" identified on the Alter TOS will, when the Alter TOS is being used to rework a nonconforming tool, also not evidence any real change to the configuration of the tool.

295. Extensive rework of nonconforming tools pursuant to an Alter TOS was performed both by Lockheed personnel and Lockheed tool vendors. In either case, the amounts charged by Lockheed for the supposed "alteration" will exceed the amounts actually needed to accomplish the identified "alteration."

296. On many occasions, even after Lockheed's tooling vendors reworked a nonconforming tool per an Alter TOS, that tool still did not conform to tool design and other Purchase Order requirements. In those cases, the tools were scrapped and remade, reworked in accordance with one of the schemes alleged herein, or used in the production of the aircraft anyway. The associated costs were billed to the United States.

297. The following is a partial list of tools for which Lockheed issued one or more Alter TOSs and, upon information and belief, regarding which Lockheed overcharged the United States by disguising extensive rework as an "alteration" of a tool:

TOOL #	ALTER TOS #	DATE	RELATED TOS #
5HF13340-901-LF	B55745	08/27/02	B55740
5HF12270-101-JDP	B55492	09/05/02	B55483
5HF12270-102-JDP	B55493	09/05/02	B55483
5HF01000-915-MEA	B56226	10/26/02	B56225
5HY00300-903-MEA-006	B56427	11/13/02	B54109
5VC12310-101-TD MEU	B56365	11/06/02	
5VC12310-101-MEU-002	B56367	11/06/02	B56365
5HF12600-901-TD FAJ	B56412	11/13/02	
5HF12600-901-FAJ	B56413	11/13/02	B56412
5HF12601-101-TD JDP	B56387	11/13/02	
5HF12601-101-JDP	B56388	11/13/02	B56387
5HF10000-903-TS TKST	B56415	11/14/02	
5HF10000-903-TKST	B56431	11/14/02	B56415
5HU05021-101-TD CMF	B56275	11/07/02	
5HU05021-101-CMF	B56277	11/07/02	B56275
5HU05021-102-CMF	B56278	11/07/02	B56275
5HF10000-911-MEC-1-003	B55951	09/23/02	B55948
5HF12601-901-FAJ-2	B56819	12/17/02	B56818
5HF11055-901-MST-4	B55172	06/10/02	B55171



5HF11055-901-MST-4-002	B55174	06/10/02	B55171
5HF11055-901-MST-4-003	B55175	06/10/02	B55171
5HF11055-901-MST-4-004	B55176	06/10/02	B55171
5HF11055-901-MST-4-005	B55177	06/10/02	B55171
5HF11055-901-MST-4-006	B55178	06/10/02	B55171
5HF11055-901-MST-4-007	B55179	06/10/02	B55171
5HF11055-901-MST-4-008	B55180	06/10/02	B55171
5HW01293-109-MEL-001	B54483	02/22/02	B54482
5HW01293-109-MEL-002	B54484	02/22/02	B54482
5HW01293-109-MEL-003	B54485	02/22/02	B54482
5HW01293-109-MEL-004	B54071	02/22/02	B54482
5HW02101-901-TD-MEA	B45994	12/08/99	
5HW02101-901-MEA	B46000	12/08/99	B45994
5HW02101-902-MEA	B46003	12/08/99	B45994
5HF13020-901-LF-002	B38948	03/17/99	B38933
5HF13020-902-LF-002	B38949	03/17/99	B38933
5HF13020-901-LF-001	B38951	03/17/99	B38933
5HF13020-902-LF-001	B38953	03/17/99	B38933
5HF11050-903-LF-15	B33740	04/22/98	B33739; B10560
5HF11050-903-TD-LF-15	B33739	04/22/98	B10555
5HF11050-903-TD-LF-15	B35689	08/10/98	B10555
5HF11050-903-TD-LF-15	B16880	03/10/96	B10555
5HW82902-851-TD-LF	B55824	12/17/02	
5HW82902-851-LF	B55825	09/04/02	B55824
5HW82902-852-LF	B55826	09/04/02	B55824
5HE25101-101-WJ	B57173	01/22/03	B57155



5HE25101-101-WJ	B56093	10/07/02	B56096
5HW01292-101-MEC-001	B38004	01/06/99	B38003
5HW01292-101-MEC-002	B38005	01/06/99	B38003; B21416
5HW01292-101-MEC	B35548	07/31/98	B31407; B21415
5HW01292-102-MEC	B35548	07/31/98	B31407; B21415
5HW01292-101-MEC-002	B35551	07/31/98	B31407; B21416
5HW01292-102-MEC-002	B35551	07/31/98	B31407; B21416
5HF12601-901-FAJ-2	B56819	12/17/02	B56818
5HF13500-901-MEU	B46077	05/31/00	B46011; B14447
5HF13500-902-MEU	B46209	05/31/00	B46011; B14448
5HF13500-901-TD-MEU	B46011	05/31/00	B14446
5HF13500-902-TD-MEU	B46011	05/31/00	B14446
5HF13500-901-TD-MEU	B55936	09/20/02	B14446
5HF13500-902-TD-MEU	B55936	09/20/02	B14446
5HF13500-901-MEU-001	B55938	09/20/02	B55936
5HF13500-901-MEU-002	B55939	09/20/02	B55936; B49834
5HF13500-902-MEU-001	B55940	09/20/02	B55936
5HF13500-902-MEU-002	B55941	09/20/02	B55936; B49835
5HF12601-101-TD-JDP	B41234	06/09/99	
5HF12601-101-JDP	B41235	06/09/99	B41234
5HF12601-101-TD-JDP	B51842	12/13/00	
5HF12601-101-JDP	B51843	12/13/00	B51842
5HC12010-901-MES-1	B51060	09/21/00	B51059
5HF12601-901-FAJ	B51841	12/13/00	B51840
5HF12601-901-FAJ	B51742	11/27/00	B51741
5HF12601-901-FAJ	B51303	10/16/00	B51303

5HF12601-901-FAJ	B52100	02/02/01	B52131
5HF13020-902-LF-001	B55263	08/06/02	B55260
5HF13020-902-LF-002	B55264	08/06/02	B55260
5HF13020-901-LF-001	B55265	08/06/02	B55260
5HF13020-901-LF-002	B55266	08/06/02	B55260
5HF13020-901-FAJ-1	B55267	08/06/02	B55262
5HF13020-902-FAJ-1	B55268	08/06/02	B55262
5HC12013-901-FAJ	B53260	07/18/01	B53259
5HF13020-901-LF	B52833	05/15/01	B52828
5HF13020-902-LF	B52843	05/15/01	B52828
5HF13020-901-LF-002	B52835	05/15/01	B52828
5HF13020-902-LF-002	B52844	05/15/01	B52828

### 3. Rework disguised as Tool Maintenance.

298. Tool maintenance is minor work on a tool that does not and is not intended to change the function or affect the characteristics of the tool or part made by the tool. Maintenance properly includes minor repairs on a worn tool or fixing tool details. Extensive rework of a nonconforming new tool is never properly categorized as tool "maintenance."

299. When proper tool maintenance is needed, a Tool Maintenance Work Record ("TMWR") card is issued for that work. It is a violation of Lockheed's procedures, and thus a violation of its contracts with the United States, to use TMWR cards to rework a nonconforming new tool.

300. Under Lockheed's procedures, TMWR cards are used only for minor maintenance, such as when the work can be performed by tooling personnel in

the immediate area. If a tool requires more extensive work, such that it has to leave the area altogether, then a TMWR card may not be used.

301. Every TMWR card is required to specify the work being performed. Every TMWR card should reference the tool number and any TOS number associated with the work to be performed. As such, all tooling documents associated with the actual work being performed pursuant to a TMWR card should be available to Lockheed.

302. In violation of its procedures regarding use of TMWR cards, Lockheed routinely sent tools out of their immediate production areas, after it had been demonstrated that they could not correctly make a part, and ordered extensive rework pursuant to a TMWR card. On many other occasions, new tools received from tooling vendors were so clearly nonconforming that Lockheed did not even send them to production areas. Lockheed simply issued a TMWR card for the needed rework.

303. When Lockheed labeled extensive rework as tool "maintenance," Lockheed never indicated on the TMWR card the true nature of the extensive rework. Indeed, there is not sufficient space on TMWR cards to set forth substantial tool defects or propose rework to remedy those defects. By labeling extensive rework as tool "maintenance," Lockheed fully intended that its abuse of its TMWR card procedures would be more difficult to uncover.

304. Use of TMWR cards further aided Lockheed in hiding rework because labor that is performed pursuant to a TMWR card is not billed to a TOS, which can be tracked to a particular tool, but rather to a blanket labor charge. Examples of blanket labor charges to which rework was billed (sometimes with a TMWR card as authorization and sometimes without one) are:

Class	Work Order
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